Report of Groundwater Sampling and Analyses
For

JEA Ponte Vedra Drainage Improvements
Ponte Vedra, Florida

MAE Project No.: 0021-0006A
November 3, 2015

Prepared for:

ALMOND ENGINEERING
CONSULTING CIVIL ENGINEERS

Prepared by:

MAE
Meskel & Associates Engineering
Geotechnical ◤ Environmental ◤ Inspection ◤ Testing

8936 Western Way, Suite 12
Jacksonville, Florida 32256
Phone (904) 519-6990
Fax (904) 519-6992

November 3, 2015

Meskel & Associates Engineering
Geotechnical ◤ Environmental ◤ Inspection ◤ Testing

Almond Engineering, Inc.
6277 DuPont Station Court East, Suite 1
Jacksonville, Florida 32217

Attention: Ms. Hillary Almond, P.E.

Reference: Report of Groundwater Sampling
JEA Ponte Vedra Drainage Improvements
Ponte Vedra, Florida
MAE Project No. 0021-0006A

Dear Ms. Almond:

Meskel & Associates Engineering, PLLC (MAE) is pleased to provide you with this Report of Groundwater Sampling for Ponte Vedra Drainage improvements, located in Ponte Vedra, Florida.

If you have any questions or concerns, please contact the undersigned at (904) 519-6990.

Sincerely,
MESKEL & ASSOCIATES ENGINEERING, PLLC
MAE FL Certificate of Authorization No. 28142

Mark R. Belyeu, P.G.
Senior Project Geologist

P. Rodney Mank, P.E.
Principal Engineer

Distribution: Ms. Hillary Almond, P.E. – Almond Engineering, P.E. 3 hard copies, 1 PDF

8936 Western Way, Suite 12
Jacksonville, Florida 32256
Phone: (904)519-6990 Fax: (904)519-6992

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List of Acronyms and Abbreviations

BDL .....Below Detection Limits
BLS .....Below Land Surface
BTEX.....Benzene, Toluene, Ethyl benzene, and Xylenes
COC .....Contaminants of Concern
DO.....Dissolved Oxygen
DPE .....Dual Phase Extraction
MAE .....Meskel & Associates Engineering, PLLC.
EPA .....United States Environmental Protection Agency
FAC.....Florida Administrative Code
FDEP.....Florida Department of Environmental Protection
FL-PRO .....Florida Petroleum Residual Organic (testing method)
GAC .....Granular Activated Carbon
GCTL.....Groundwater Cleanup Target Levels (as defined in 62-777, FAC)
MSL.....Mean Sea Level
MTBE .....Methyl Tert-Butyl Ether
NADC.....Natural Attenuation Default Concentrations
NPDES.....National Pollutant Discharge Elimination System
NTU.....Nephelometric Turbidity Units
PAH.....Polycyclic Aromatic Hydrocarbons
RAP .....Remedial Action Plan
SVE .....Soil Vapor Extraction
TRPH.....Total Recoverable Petroleum Hydrocarbons
VCO .....Verbal Change Order
VOA.....Volatile Organic Aromatics
µg/L.....Micrograms per Liter

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Report of Groundwater Sampling

Ponte Vedra Drainage Improvements
MAE Report No. 0021-0006A
Prepared by:

MESKEL & ASSOCIATES ENGINEERING, PLLC
8963 WESTERN WAY, SUITE 12
JACKSONVILLE, FLORIDA 32256

GEOLOGY BUSINESS LICENSE NUMBER – GB683

In accordance with the provisions of Florida Statutes Chapter 492, this Groundwater Sampling Report for the Ponte Vedra Drainage Improvements Final Design located along San Juan Drive and Pablo Road in Ponte Vedra, St. Johns County, Florida has been prepared under the direct supervision of a Professional Geologist registered in the State of Florida. This report was prepared in accordance with generally accepted professional practices pursuant to Chapter 492 of the Florida Statutes. The data, findings, recommendations, specifications or professional opinions were prepared solely for the use of the Florida Department of Environmental Protection and Almond Engineering. Meskel & Associates Engineering, PLLC makes no other warranty, either expressed or implied, and is not responsible for the interpretation by others of these data.

Mark R. Belyeu, P.G. Date: 10/30/2015
Project Geologist
Licensed, Florida No. PG-2217

Meskel & Associates Engineering

8936 Western Way, Suite 12
Jacksonville, Florida 32256
Phone: (904)519-6990 Fax: (904)519-6992

1.0 INTRODUCTION

Meskel & Associates Engineering, PLLC (MAE) has completed a groundwater sampling program to provide chemical background data to assist in the submittal of a Notice of Intent (NOI) to potentially discharge dewatering effluent to '*Waters of the State'* through the Florida Department of Environmental Protection (FDEP) under the auspices of the *Generic Permit for the Discharge of Produced Groundwater from Any Non-Contaminated Site Activity*, FAC 62-621.300(2).

Project information was provided to us by Ms. Hillary Almond, P.E., with Almond Engineering, P.A. (Almond). We also downloaded the project Request for Proposal (RFP) issued by JEA and titled Solicitation for Participation in Engineering Services for Ponte Vedra Water Main and Force Main Replacement Solicitation Number 072-14. The RFP included the Project Description that detailed the planned construction.

MAE provided with an aerial photograph showing the general area of the project. The general project location is east of A1A and west of Ponte Vedra Boulevard along San Juan Drive, Pablo Road, and Pablo Drive in Ponte Vedra, St John's County, Florida. The general site location is shown on Figure 1.

It is understood that the pipelines constructed along the existing roadways will be constructed using traditional open-cut methods. The pipelines will have a minimum soil cover of either 30 inches (below unpaved areas) or 36 inches (below existing/future paved areas).

The subject project is located along San Juan Drive to the west of Lake Vedra to Pablo Road and terminates at the intersection of Pablo Road and Pablo Drive in Ponte Vedra, St. Johns County, Florida. The general site location is illustrated on **Figure 1** and consists of residential areas with Lake Vedra to the east and north (**Figure 2**).

2.0 REPORT LIMITATIONS

This report has been prepared for the exclusive use of Almond Engineering, P.A. for specific application to the proposed JEA Ponte Vedra Force Main & Water Main Replacement project. This groundwater evaluation was performed in accordance with generally accepted practices of this profession, undertaken in similar studies at the same time and in the same geographical area. We have endeavored to meet this standard of care, but may be limited by conditions encountered during performance, a client-driven scope of work, or inability to review information not received by the report date. Where appropriate, these limitations are discussed in the text of the report, and an evaluation of their significance with respect to our findings has been conducted. No warranty, express or implied, is made.

The evaluation and recommendations contained in this report are based on the data obtained from the water samples collected for this project. The scope of our services did not include any environmental assessment or testing for the presence or absence of hazardous or toxic materials in the soil, groundwater, or surface water above/beyond those parameters and chemical analytes examined. The collection of grab water samples, such as performed at this site, are of limited scope and cannot eliminate the potential that hazardous, toxic, or petroleum substances are present or have been released at the site beyond what is identified by the limited water sampling and chemical analyses. No limited groundwater sampling program can wholly eliminate uncertainty regarding

the potential for contamination in connection with a property. Performance of this practice is intended to reduce, but not eliminate, uncertainty regarding the potential for groundwater and surface water impacts. These risks may be further evaluated, but not eliminated, through additional research and/or chemical evaluation and assessment.

If changes in the design or location of the project occur, the conclusions and recommendations contained in this report may need to be modified. We recommend that these changes be provided to us for our consideration. MAE is not responsible for conclusions, interpretations, opinions or recommendations made by others based on the data contained in this report.

3.0 SITE CONDITIONS

The site at the time of our field exploration consisted of a manicured residential neighborhood within a planned golf community. The drilling operations and water sampling areas were within the JEA right of way.

4.0 NEARBY CONTAMINATED SOURCES

This investigation included a review of FDEP databases for nearby contaminated sites. The FDEP Contamination Locator Map (CLM) was consulted to evaluate properties near the area of the proposed pipe-line installation. In addition, the FDEP Institutional Controls Map was reviewed to evaluate sites within the specified 500-foot search radius.

The results of the FDEP database review indicated no impacted sites within the prescribed 500-foot radius of the proposed dewatering area.

5.0 WATER SAMPLING AND ANALYTICAL RESULTS

Access to and subsequent sampling of the groundwater was performed in-situ via direct push drilling techniques. A stainless steel sampling probe was advanced to a depth of 9-feet below land surface (bls).

Groundwater samples were collected from sample location B-1 and B-2 on September 21, 2015. During the sampling event, depth to water was measured directly because of the direct push methods being employed. However, groundwater was estimated between 6 and 8 feet below land surface during the grab sampling event. Although not necessary for grab sample collection, MAE promoted efforts to establish stable purging parameters at the respective sampling locations in general accordance with the FDEP Standard Operating Procedures (FS 2212) before the location was sampled. **Appendix A** contains the groundwater sampling log and laboratory equipment calibration sheets.

Following the purging activities, grab groundwater samples were collected from the direct boring locations using poly-tubing connected to a peristaltic pump. The collected samples were placed into laboratory-supplied bottles, stored on wet ice, and submitted to a State of Florida approved analytical laboratory, ALS Environmental (ALS) in Jacksonville, Florida. ALS is a NELAP-certified laboratory, Number E82502.

The groundwater samples were analyzed for the presence of Total Organic Carbon (TOC), pH, Benzene, Naphthalene, Hardness, Turbidity, and Total Recoverable Mercury, Arsenic, Cadmium,

Copper, Lead, Zinc, and Hexavalent Chromium. In addition, a single surface water sample was collected from Lake Vedra from the center span of the bridge along Pablo Road. The surface water sample was obtained using a dedicated Teflon bailer, which was descended to a depth of approximately 1.5 feet below the lake surface. The surface water samples were field analyzed and laboratory tested for the same parameters as the groundwater samples to offer comparison for possible surface water discharge points and present natural background levels. Copies of the groundwater analytical results are provided in **Appendix B**.

The results from the laboratory analysis of the groundwater samples indicated the tested analytes did not exhibit concentrations exceeding the FDEP Screening Values for Discharges into Fresh Water, in sample point B-1 or B-2 except for Total Organic Carbon (TOC) and pH (for sample point B-1), as defined in Chapter 62-621.300(2), F.A.C. The final TOC concentrations were 12.0 and 21.7 milligrams per liter (mg/L), respectively; the acceptable regulatory range for TOC is 10 mg/L. The final pH concentration was 5.93 in B-1; the acceptable regulatory range for pH is 6.0 to 8.5. In addition, surface water sample SW-1 exhibited a TOC concentration of 13.5 mg/L, which is also in excess of FDEP surface water standards. **Table 1** presents the analytical data and respective FDEP and JEA discharge limits.

6.0 CONCLUSIONS AND PERMIT REQUEST

The results of laboratory analyses of groundwater samples collected indicate the FDEP screening values for *Surface Water Discharges into Fresh Waters* described in Chapter 62-621.300(2) FAC, Table I and the JEA's Maximum Allowable Discharge Limits are satisfactorily met for all listed parameters except for TOC (*under the FDEP guidelines*, *only*). Elevated TOC levels were identified in all samples collected, and they are a typical indicator of groundwater quality. Naturally occurring carbonates (as often found in beach-type sands) can contribute to TOC levels, and given the depth of sampling is a likely factor. However, the general location (*active golf course community*) of the site may offer an explanation to elevated TOC, in which the surface application of pesticides and nutrients to the area and possibly effect the TOC levels. Only additional testing and analyses can confirm or deny the TOC issue.

Under the new dewatering rules, when applying for a 'clean' generic permit, TOC is not a listed parameter, and concerns for exceedances of TOC are reserved when applying for generic petroleum discharge sites. Based on the information currently in hand, the client may request the dewatering activity be applied for as a clean site (*as per FDEP guidelines*). Additionally, MAE recommends the final dewatering design and Best Management Practices (BMPs) address include a plan to resolve the TOC issue, should it be necessary. However, the acquisition of a dewatering permit is not necessary if the dewatering plan includes the discharge of dewatering effluent into a JEA wastewater treatment system.

The review of regulatory database information indicates no facilities with groundwater impacts within 500 feet of the proposed dewatering operation (**Appendix C**). Based on this information and the analytical data, MAE conferred with the FDEP and subsequently identified the approach to securing a dewatering discharge permit.

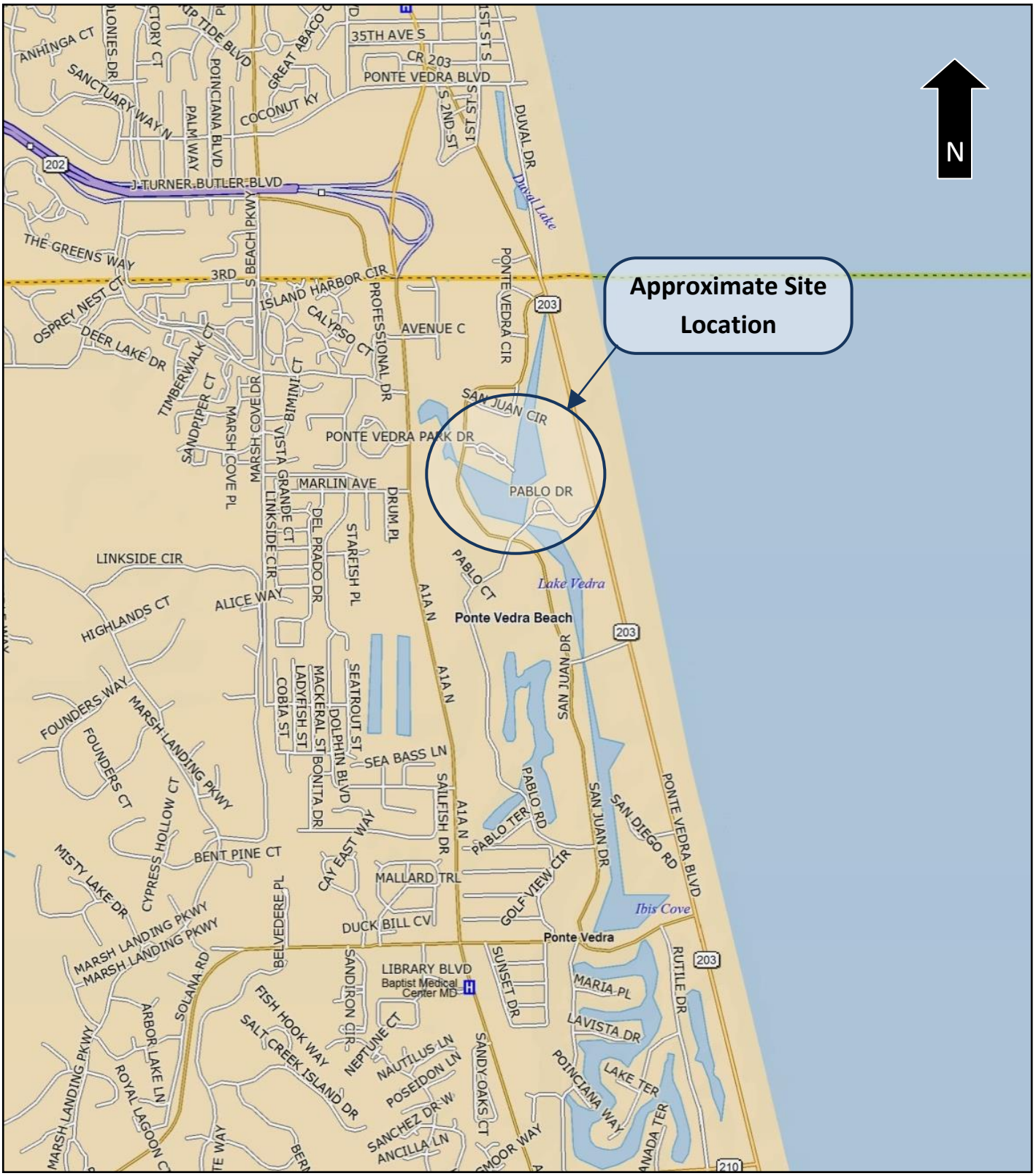
If the proposed area of dewatering is anticipated for a construction activity exceeding 1 acre in size, then MAE recommends the construction contractor acquire the Dewatering Permit as part of the Construction General Permit (CGP). The Dewatering Permit will not add any additional cost to the CGP, provided it is applied for at the time of its CGP application. The development of dewatering

BMPs will still be required prior to initiation of the dewatering operation, as per the *Generic Permit for the Discharge of Produced Groundwater from Any Non-Contaminated Site Activity,* FAC 62-621.300(2). If the proposed area of dewatering is in excess of 500 feet from a contaminated site, and analytical data does not suggest gross groundwater contamination, then an application for a clean generic permit is suitable. Please be advised that the FDEP regulations state that the *permittee* is ultimately responsible for discharges to the waters of the state. Therefore, MAE recommends additional testing of groundwater to ensure TOC and field pH levels are not originating from a regulated source.

Following the commencement of dewatering operations, per Chapter 62-621FAC, BMPs, developed by the dewatering contractor, must be adhered to including record-keeping, and collection of effluent samples as required.

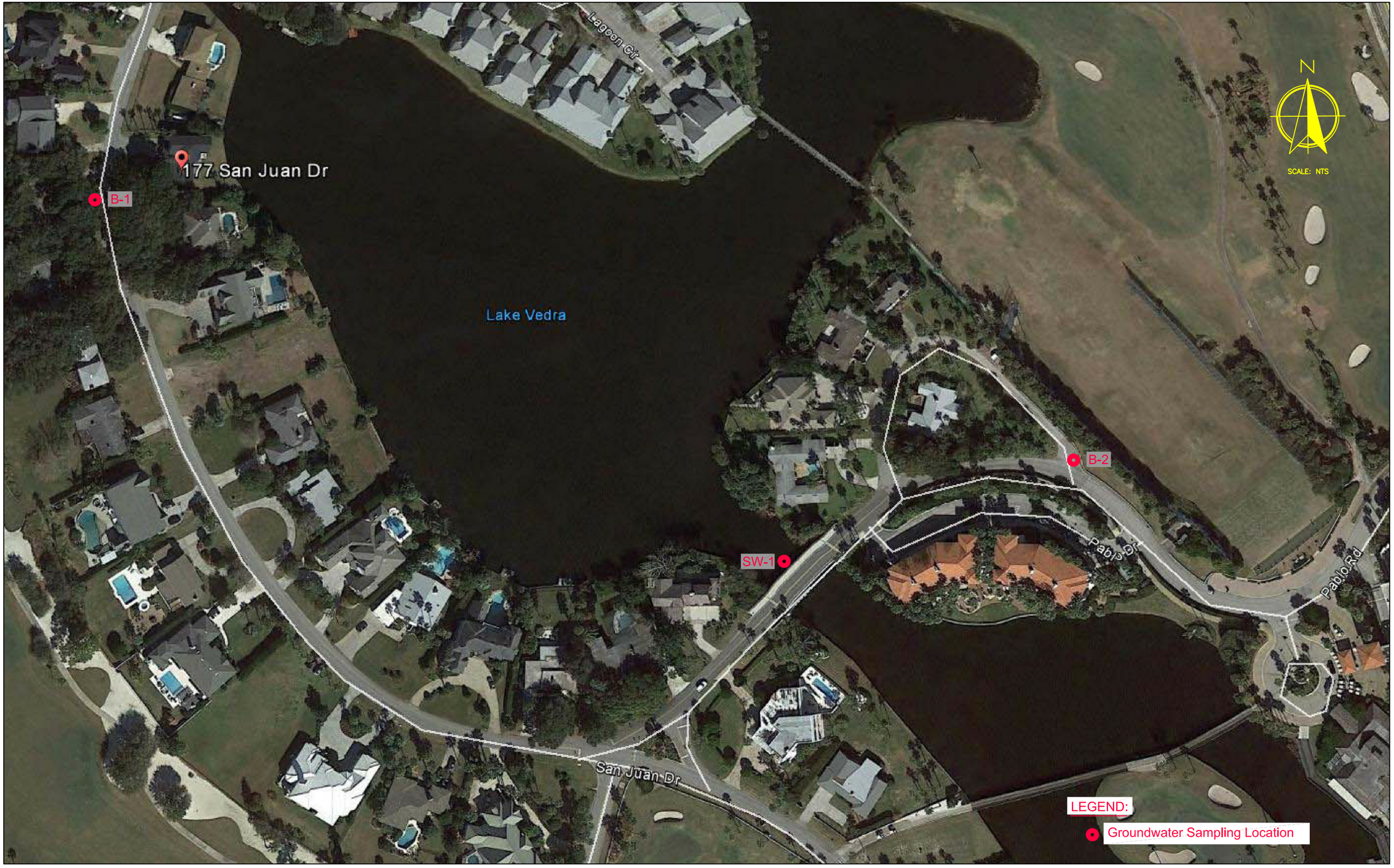
8936 Western Way, Suite 12
Jacksonville, Florida 32256
Phone: (904)519-6990 Fax: (904)519-6992

Figures



Site Location Map

PREPARED BY	PROJECT NAME	
MAE meskelengineering.com	**JEA Ponte Vedra Water Main & Force Main Replacement Ponte Vedra Beach, Florida**	
	REFERERENCE	SCALE
	Delorme XMap 7.0	NTS
PREPARED FOR	MAE PROJECT NO.	**FIGURE NO.**
Almond Engineering, P.A.	0021-0006	1



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

P. RODNEY MANK, P.E. P.E. NO.: 41986

MAE

Meskel & Associates Engineering, PLLC

FL Certificate of Authorization No. 28142

8936 Western Way, Suite 12, Jacksonville, FL 32246

CLIENT: Almond Engineering, P.A.

DATE:	MAE PROJECT NO.
10/8/2015	0021-0006

SHEET TITLE: Groundwater Sampling Location Plan

PROJECT NAME: JEA Ponte Vedra Water Main & Force Main Replacement

FIGURE NO. 2

Tables

TABLE 1
Groundwater Analytical Summary
Ponte Vedra Force Main Improvements
St. Johns County, Florida
MAE Project Number 0021-0003

Well Number Sample Date Parameter, Method, Unit	SW-1 9/21/2015	B-1 9/21/2015	B-2 9/21/2015	FDEP Screening Values for Discharges into Fresh Waters (Table I, Chapter 62-621.300(2) FAC)	JEA's Maximum Allowable Discharge Limits
Benzene, 624/602, (ug/L)	0.210 U	0.210 U	0.210 U	1	NL
Naphthalene 601/625, (ug/L)	0.541 U	0.553 U	. 0564 U	100	NL
Total Organic Carbon SM 5310/C-2000 (2011), (mg/L)	**13.5**	**12.0**	**21.7**	10	NL
Arsenic	8.2	0.5 U	0.5 U	10	NL
Hexavalent Chromium, SM 3500-CrB, (ug/L)	1.1	1.0	0.5 U	11	NL
Cadmium, 200.8, (ug/L)	0.10U	0.10U	0.10 U	9.3	1,200
Calcium, 200.7, (mg/L)	NS	NS	NS	NL	NL
Copper, 200.8, (ug/L)	3.9	1.5	1.0	2.9	3,380
Lead, 200.8, (ug/L)	0.41 i	0.43 i	0.58	30	1,170
Mercury, 1631, (ug/L)	0.0018	0.10	0.010	12	600
Magnesium, 200.7 (mg/L)	NS	NS	NS		
Zinc, 200.8, (ug/L)	1.7 i	34.2	18.3	86	2,610
Hardness, SM 2340B, (mg/L)	NC	NC	NC	NL	NL
pH (field) Standard Units	8.45	**5.93**	6.01	6.0 – 8.5	5.5 – 12.0
Turbidity (field), NTU	9.14	21.7	25.0	NL	NL

Notes:
FAC – Florida Administrative Code
FDEP – Florida Department of Environmental Protection
mg/L – milligrams per liter
ug/L – micrograms per liter
NL – Not Listed
NS – Not Sampled
NTU – Nephelometric Turbidity Unit
U – Analyte not detected above laboratory practical quantitation limit
i – result between laboratory method detection limit and laboratory practical quantitation limit
V – Indicates that the analyte was detected in both the sample and method blank
NC – Not Calculated

Appendix A

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: JEA PONTE VEDRA FM & WM REP.	SITE LOCATION:	
WELL NO: B-1	SAMPLE ID: B-1	DATE: 9/21/15

PURGING DATA

WELL DIAMETER (inches): DIRECT PUSH 1.5"	TUBING DIAMETER (inches): 0.25 OD	WELL SCREEN INTERVAL DEPTH: feet to 9 feet	STATIC DEPTH TO WATER (feet): N/A	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): NA	FINAL PUMP OR TUBING DEPTH IN WELL (feet): NA	PURGING INITIATED AT: 11:08	PURGING ENDED AT: 11:22	TOTAL VOLUME PURGED (gallons): NA

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or mS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
10:51					5.99	25.65	379	4.5%	428	TAN TURBID	NONE
10:57					5.91	25.44	367	7.8%	136.0	TAN TURBID	NONE
11:05					5.90	25.39	360	6.0%	80.6	TAN TURBID	NONE
11:12					5.92	25.40	357	4.0%	38.5	TAN TURBID	NONE
11:24	GRAB SAMPLES				5.93	25.36	353	1.9%	21.7	CLEAR	NONE

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: MR BELIVEAU & M. VERCELES / MAE	SAMPLER(S) SIGNATURE(S): MR Beliveau M. Verceles	SAMPLING INITIATED AT: 11:25	SAMPLING ENDED AT: 11:40
PUMP OR TUBING DEPTH IN WELL (feet): PE	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y N (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
B-1	3	CG	40ml	HCl + Ice		≤5.93	624	APP	≤100
B-1	2	AG	40ml	HCl + Ice		≤5.93	TOC	APP	≤100
B-1	1	PE	250ml	HNO_3 + Ice		≤5.93	METALS	APP	200
B-1	1	PE	500ml	Ice		5.93	pH, HexCr	APP	200
B-1	1	CG	500ml	Ice		5.93	Low Lev. Hg	APP	200
B-1	2	AG	1L	Ice		5.93	625	APP	200

REMARKS:
SATURATED SOIL @ 3 FT.

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: JEA PONTE VEDRA FM & WM REP.	SITE LOCATION:	
WELL NO: B-2	SAMPLE ID: B-2	DATE: 9/21/15

PURGING DATA

WELL DIAMETER (inches): DIRECT PUSH 1.5"	TUBING DIAMETER (inches): 0.25 O.D.	WELL SCREEN INTERVAL DEPTH: feet to 9 feet	STATIC DEPTH TO WATER (feet): N/A	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (NA feet – feet) X gallons/foot = NA gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): NA	FINAL PUMP OR TUBING DEPTH IN WELL (feet): NA	PURGING INITIATED AT: 12:15	PURGING ENDED AT: 12:45	TOTAL VOLUME PURGED (gallons):

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
12:32					6.36	28.90	322	23.0%	71.6	YELLOW BROWN	NONE
12:40		GRAB SAMPLES			6.07	29.06	320	10.2%	35.8	"	NONE
12:45					6.01	29.08	320	8.4%	25.0	"	NONE

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: MR BELYEU + M. VERCELES / MAE	SAMPLER(S) SIGNATURE(S): MR Belyeu M. Verceles	SAMPLING INITIATED AT: 12:46	SAMPLING ENDED AT: 12:58
PUMP OR TUBING DEPTH IN WELL (feet): NA	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y N (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
B-2	3	CG	40 ml	HCl + ICE		≤6.01	624	APP	≤100
B-2	2	AG	40ml	HCl + ICE		≤6.01	TOC	APP	≤100
B-2	1	PE	250ml	HNO_3 + ICE		≤6.01	METALS	APP	≤200
B-2	1	PE	500ml	ICE		≤6.01	pH, HEX CR	APP	≤200
B-2	1	CG	500ml	ICE		≤6.01	LOW LEV. Hg	APP	≤200
B-2	2	AG	1L	ICE		≤6.01	625	APP	≤200

REMARKS:
SATURATED SOIL @ 4-5 FT.

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: JEA PONTE VEDRA FM & WM REP	SITE LOCATION:	
WELL NO: SW-1	SAMPLE ID: SW-1	DATE: 9/21/15

PURGING DATA

WELL DIAMETER (inches): NA	TUBING DIAMETER (inches): NA	WELL SCREEN INTERVAL DEPTH: ~~feet to~~ feet	STATIC DEPTH TO WATER (~~feet~~):	PURGE PUMP TYPE OR BAILER: NA

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): NA	FINAL PUMP OR TUBING DEPTH IN WELL (feet): NA	PURGING INITIATED AT: NA	PURGING ENDED AT: NA	TOTAL VOLUME PURGED (gallons): NA

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or (µS/cm)	DISSOLVED OXYGEN (circle units) mg/L or (% saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
13:12	(SURFACE WATER GRAB)				8.45	29.34	584	180.9 %)	9.14	CLEAR	NONE

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: MR BELYEU & M. VERCELES / MAE	SAMPLER(S) SIGNATURE(S): MR Belyeu M. Verceles	SAMPLING INITIATED AT: 13:30	SAMPLING ENDED AT: 13:49
PUMP OR TUBING DEPTH IN WELL (feet): NA	TUBING MATERIAL CODE: NA	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y N (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SW-1	3	CG	40 ml	HCl + Ice		≤8.45	624		NA
SW-1	2	AG	40 ml	HCl + Ice		≤8.45	TOC		
SW-1	1	PE	250 ml	HNO_3 + Ice		≤8.45	METALS		
SW-1	1	PE	500 ml	Ice		8.45	pH Hex Cr		
SW-1	1	CG	500 ml	Ice		8.45	Low Lev. Hg		
SW-1	2	AG	1 L	Ice		8.45	625		

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Certificate of Calibration
Multi-Parameter Water Quality

Equipment Type:	YSI 556				
Date	September 17, 2015				
Serial #	14A100121		***NOTES:***		
Calibration Standard # 1	pH 4.01				
Calibration Standard # 2	pH 7.00				
Calibration Standard # 3	pH 10.00				
Calibration Standard # 4	100% D.O Saturation				
Calibration Standard # 5	Zobell ORP Solution				
Calibration Standard # 6	1000uS Conductivity				
Calibration Standard # 7					
Calibration Standard # 8					
Calibration Standard # 9					
Lot # (s)	Conductivity 5a115z	4.01pH 9k300	7pH 44252	10pH aH255	ORP15J100237
	exp. 10-2016	exp.9-2016	exp.6-2016	exp.8-2016	exp.9-2017
Ambient Temperature	23°C (73.4°F)				
Instrument Reading; Calibrated	pH 4.01	pH 7.01	pH 10.04	Cond. 3000uS	
	237.5mV ORP	8.56 mg/L D.O.			
Calibrated By:		***Signature:***			

Peterson Environmental, Inc.
1704 W. Grace Street
Tampa, FL 33607
Phone: 813-871-2626| Fax 813-871-1366

Certificate of Calibration
Turbidity Meters

Equipment Type:	Hach2100Q			
Date	September 17, 2015			
Serial #	13120C030053			
Calibration Standard # 1	10NTU			
Calibration Standard # 2	20NTU			
Calibration Standard # 3	100NTU			
Calibration Standard # 4	800NTU			
Lot # (s)	268401			
Expiration Date(s)	N/A			
Ambient Temperature	24°C (75.2°F)			
Instrument Reading: Calibrated	10.01 NTU	20.2 20.2	100	799
Calibrated By:	Brian Gibson			

NOTES:

Signature: _____

Peterson Environmental, Inc.
1704 W. Grace Street
Tampa, FL 33607
Phone: 813-871-2626| Fax 813-871-1366

Appendix B

September 30, 2015 Service Request No:J1507498

Mark Belyeu
Meskel and Associates Engineering
8936 Western Way
Jacksonville, FL 32256

Laboratory Results for: JEA Ponte Vedra FM & WM Replacement

Dear Mark,

Enclosed are the results of the sample(s) submitted to our laboratory September 21, 2015
For your reference, these analyses have been assigned our service request number **J1507498.**

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAP standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. In accordance to the NELAC 2003 Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Please contact me if you have any questions. My extension is 4410. You may also contact me via email at Jerry.Allen@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Jerry Allen
Project Manager

ADDRESS 9143 Philips Highway, Suite 200, Jacksonville, FL 32256
PHONE +1 904 739 2277 | FAX +1 904 739 2011
ALS Group USA, Corp.
dba ALS Environmental

SAMPLE DETECTION SUMMARY

CLIENT ID: B-1	Lab ID: J1507498-001					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
Copper, Total	1.5		0.3	1.0	ug/L	200.8
Lead, Total	0.43	I	0.12	0.50	ug/L	200.8
Zinc, Total	34.2		1.6	5.0	ug/L	200.8
Chromium, Hexavalent	0.0010		0.0005	0.0010	mg/L	SM 3500-Cr
pH	6.59				pH Units	SM 4500-H+
Carbon, Total Organic (TOC)	12.0		0.09	1.0	mg/L	SM 5310 B

CLIENT ID: B-2	Lab ID: J1507498-002					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
Copper, Total	1.0		0.3	1.0	ug/L	200.8
Lead, Total	0.58		0.12	0.50	ug/L	200.8
Zinc, Total	18.3		1.6	5.0	ug/L	200.8
pH	6.82				pH Units	SM 4500-H+
Carbon, Total Organic (TOC)	21.7		0.09	1.0	mg/L	SM 5310 B

CLIENT ID: SW-1	Lab ID: J1507498-003					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
Arsenic, Total	8.2		0.5	1.0	ug/L	200.8
Copper, Total	3.9		0.3	1.0	ug/L	200.8
Lead, Total	0.14	I	0.12	0.50	ug/L	200.8
Zinc, Total	1.7	I	1.6	5.0	ug/L	200.8
Chromium, Hexavalent	0.0011		0.0005	0.0010	mg/L	SM 3500-Cr
pH	8.69				pH Units	SM 4500-H+
Carbon, Total Organic (TOC)	13.5		0.09	1.0	mg/L	SM 5310 B

9143 Philips Highway, Suite 200, Jacksonville, FL 32256 | 904-739-2277 | www.alsglobal.com

Client: Meskel and Associates Engineering **Service Request:**J1507498
Project: JEA Ponte Vedra FM & WM Replacement/0021-0006 **Date Received:**9/21/15
Sample Matrix: Water

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables, including results of QC samples analyzed from this delivery group. When appropriate to the procedure, method blank results have been reported with each analytical test. Analytical procedures performed by the lab are validated in accordance with NELAC standards. Parameters that are included in the NELAC Fields of Testing but are not included in the lab's NELAC accreditation are identified in the discussion of each analytical procedure.

Sample Receipt

Three water samples were received for analysis at ALS Environmental on 9/21/15. The samples were received in good condition and consistent with the accompanying chain of custody form. Samples are refrigerated at ≤6°C upon receipt at the lab except for aqueous samples designated for metals analyses, which are stored at room temperature.

Volatile Organic Analyses:

No significant data anomalies were noted with this analysis.

Semi-Volatile Organic Analyses:

No significant data anomalies were noted with this analysis.

Metals Analyses:

No significant data anomalies were noted with this analysis.

General Chemistry Analyses:

The matrix spike recovery of 0% for Hexavalent Chromium for sample J1507498-001 was outside the ALS control limit due to the possible reducing characteristic of the sample matrix. As per the methodology, a tenfold dilution of the samples was prepared, and analyzed. The Laboratory Control Sample (LCS) for the batch was within control limits; the diluted matrix spike was 68%. The low matrix spike recovery suggests the potential a low bias may exist for this sample. The sample result is flagged to indicate the variance. No further corrective action was appropriate.

Method SM3500-CrB: The Relative Percent Difference (RPD) criterion for the replicate analysis of analyte(s) in J1507498-001 is not applicable because the analyte concentration was not significantly greater than the Method Reporting Limit (MRL). Analytical values derived from measurements close to the detection limit are not subject to the same accuracy and precision criteria as results derived from measurements higher on the calibration range for the method.

Subcontracted Analytical Parameters:

An aliquot of the samples were delivered to ALS in Holland, MI for 1631 determination. The certified analytical report has been included in its entirety in Appendix A: Subcontracted Analytical Results.

Approved by _____ Date 9/30/2015

State Certifications, Accreditations, and Licenses

Agency	Number	Expire Date
Department of Defense	66206	9/20/2016
Florida Department of Health	E82502	6/30/2016
Georgia Department of Natural Resources	958	6/30/2016
Kentucky Division of Waste Management	63	6/30/2016
Louisiana Department of Environmental Quality	02086	6/30/2016
Maine Department of Health and Human Services	2015002	2/3/2017
North Carolina Department of Environment and Natural Resources	527	12/31/2015
Pennsylvania Department of Environmental Protection	68-04835	8/31/2016
South Carolina Department of Health and Environmental Control	96021001	6/30/2016
Texas Commision on Environmental Quality	T104704197-13-5	5/31/2016
Virginia Environmental Accreditation Program	460191	12/14/2015

Data Qualifiers

Florida-DEP

!	Data deviates from historically established concentration ranges
*	Not reported due to interference
?	Data is rejected and should not be used
A	Value reported is the arithmetic mean of two or more determininations
B	Results based upon colony counts outside the acceptable range.
D	Measurement was made in the field.
E	Extra samples were taken at composite stations
H	Value based on field kit determination; results may not be accurate.
I	The reported value is between the laboratory method detection limit and the laboratory PQL.
J	Estimated value.
K	Off scale low. The value is less than the lowest calibration standard.
L	Off scale high. The analyte is above the acceptable level of quantitation.
M	The MDL/MRL has been elevated because the analyte could not be accurately quantified.
N	Presumptive evidence of presence of material.
O	Sampled, but analysis lost or not performed
Q	Sample held beyond the acceptable holding time.
R	Significant rain in the past 48 hours (typically in excess of 0.5 inches)
T	Estimated value, less than the MDL
U	Indicates that the compound was analyzed for but not detected.
V	Indicates that the analyte was detected in both the sample and the associated method blank.
X	Insufficient individuals were present in the sample to achieve a minimum of 280 organisms for identification (Stream Condition Index Analysis only)
Y	The laboratory analysis was from an unpreserved or improperly preserved sample.
Z	Too many colonies were present, the numeric value represents the filtration volume

ALS Laboratory Group

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Client: Meskel and Associates Engineering **Service Request:**J1507498

Project: JEA Ponte Vedra FM & WM Replacement/0021-0006

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
J1507498-001	B-1	9/21/2015	1125
J1507498-002	B-2	9/21/2015	1246
J1507498-003	SW-1	9/21/2015	1330

Analytical Report

Client:	Meskel and Associates Engineering	**Service Request:**	J1507498
Project:	JEA Ponte Vedra FM & WM Replacement/0021-0006	**Date Collected:**	09/21/15 11:25
Sample Matrix:	Water	**Date Received:**	09/21/15 15:05
Sample Name:	B-1	**Units:**	ug/L
Lab Code:	J1507498-001	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 624

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Q
Benzene	0.210 U	1.00	0.210	1	09/22/15 21:31	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	108	68 - 118	09/22/15 21:31	
4-Bromofluorobenzene	103	78 - 129	09/22/15 21:31	
Dibromofluoromethane	102	80 - 114	09/22/15 21:31	
Toluene-d8	97	87 - 118	09/22/15 21:31	

Client:	Meskel and Associates Engineering	**Service Request:**	J1507498
Project:	JEA Ponte Vedra FM & WM Replacement/0021-0006	**Date Collected:**	09/21/15 11:25
Sample Matrix:	Water	**Date Received:**	09/21/15 15:05
Sample Name:	B-1	**Units:**	ug/L
Lab Code:	J1507498-001	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 625
Prep Method: Method

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Naphthalene	0.553 U	5.21	0.553	1	09/23/15 18:04	9/22/15	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	67	33 - 133	09/23/15 18:04	
2-Fluorobiphenyl	59	22 - 105	09/23/15 18:04	
2-Fluorophenol	41	10 - 69	09/23/15 18:04	
Nitrobenzene-d5	59	10 - 123	09/23/15 18:04	
Phenol-d6	31	10 - 59	09/23/15 18:04	
p-Terphenyl-d14	67	28 - 120	09/23/15 18:04	

Analytical Report

Client:	Meskel and Associates Engineering	**Service Request:**	J1507498
Project:	JEA Ponte Vedra FM & WM Replacement/0021-0006	**Date Collected:**	09/21/15 11:25
Sample Matrix:	Water	**Date Received:**	09/21/15 15:05
Sample Name:	B-1	**Basis:**	NA
Lab Code:	J1507498-001		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Total	200.8	0.5 U	ug/L	1.0	0.5	1	09/28/15 14:48	09/22/15	
Cadmium, Total	200.8	0.10 U	ug/L	0.40	0.10	1	09/28/15 14:48	09/22/15	
Copper, Total	200.8	**1.5**	ug/L	1.0	0.3	1	09/28/15 14:48	09/22/15	
Lead, Total	200.8	**0.43 I**	ug/L	0.50	0.12	1	09/28/15 14:48	09/22/15	
Zinc, Total	200.8	**34.2**	ug/L	5.0	1.6	1	09/28/15 14:48	09/22/15	

Analytical Report

Client:	Meskel and Associates Engineering	**Service Request:**	J1507498
Project:	JEA Ponte Vedra FM & WM Replacement/0021-0006	**Date Collected:**	09/21/15 11:25
Sample Matrix:	Water	**Date Received:**	09/21/15 15:05
Sample Name:	B-1	**Basis:**	NA
Lab Code:	J1507498-001		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	PQL	MDL	Dil.	Date Analyzed	Q
Carbon, Total Organic (TOC)	SM 5310 B	**12.0**	mg/L	1.0	0.09	1	09/28/15 15:36	
Chromium, Hexavalent	SM 3500-Cr B	**0.0010**	mg/L	0.0010	0.0005	1	09/21/15 16:45	
pH	SM 4500-H+ B	**6.59**	pH Units	-	-	1	09/22/15 14:04	

Client:	Meskel and Associates Engineering	**Service Request:**	J1507498
Project:	JEA Ponte Vedra FM & WM Replacement/0021-0006	**Date Collected:**	09/21/15 12:46
Sample Matrix:	Water	**Date Received:**	09/21/15 15:05
Sample Name:	B-2	**Units:**	ug/L
Lab Code:	J1507498-002	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 624

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Q
Benzene	0.210 U	1.00	0.210	1	09/22/15 21:56	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	109	68 - 118	09/22/15 21:56	
4-Bromofluorobenzene	103	78 - 129	09/22/15 21:56	
Dibromofluoromethane	104	80 - 114	09/22/15 21:56	
Toluene-d8	98	87 - 118	09/22/15 21:56	

Client:	Meskel and Associates Engineering	**Service Request:**	J1507498
Project:	JEA Ponte Vedra FM & WM Replacement/0021-0006	**Date Collected:**	09/21/15 12:46
Sample Matrix:	Water	**Date Received:**	09/21/15 15:05
Sample Name:	B-2	**Units:**	ug/L
Lab Code:	J1507498-002	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 625
Prep Method: Method

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Naphthalene	0.564 U	5.32	0.564	1	09/23/15 18:29	9/22/15	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	51	33 - 133	09/23/15 18:29	
2-Fluorobiphenyl	44	22 - 105	09/23/15 18:29	
2-Fluorophenol	31	10 - 69	09/23/15 18:29	
Nitrobenzene-d5	42	10 - 123	09/23/15 18:29	
Phenol-d6	26	10 - 59	09/23/15 18:29	
p-Terphenyl-d14	53	28 - 120	09/23/15 18:29	

Analytical Report

Client:	Meskel and Associates Engineering	**Service Request:**	J1507498
Project:	JEA Ponte Vedra FM & WM Replacement/0021-0006	**Date Collected:**	09/21/15 12:46
Sample Matrix:	Water	**Date Received:**	09/21/15 15:05
Sample Name:	B-2	**Basis:**	NA
Lab Code:	J1507498-002		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Total	200.8	0.5 U	ug/L	1.0	0.5	1	09/28/15 14:53	09/22/15	
Cadmium, Total	200.8	0.10 U	ug/L	0.40	0.10	1	09/28/15 14:53	09/22/15	
Copper, Total	200.8	**1.0**	ug/L	1.0	0.3	1	09/28/15 14:53	09/22/15	
Lead, Total	200.8	**0.58**	ug/L	0.50	0.12	1	09/28/15 14:53	09/22/15	
Zinc, Total	200.8	**18.3**	ug/L	5.0	1.6	1	09/28/15 14:53	09/22/15	

Analytical Report

Client:	Meskel and Associates Engineering	**Service Request:**	J1507498
Project:	JEA Ponte Vedra FM & WM Replacement/0021-0006	**Date Collected:**	09/21/15 12:46
Sample Matrix:	Water	**Date Received:**	09/21/15 15:05
Sample Name:	B-2	**Basis:**	NA
Lab Code:	J1507498-002		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	PQL	MDL	Dil.	Date Analyzed	Q
Carbon, Total Organic (TOC)	SM 5310 B	**21.7**	mg/L	1.0	0.09	1	09/28/15 15:50	
Chromium, Hexavalent	SM 3500-Cr B	0.0005 U	mg/L	0.0010	0.0005	1	09/21/15 16:45	
pH	SM 4500-H+ B	**6.82**	pH Units	-	-	1	09/22/15 14:16	

Analytical Report

Client:	Meskel and Associates Engineering	**Service Request:**	J1507498
Project:	JEA Ponte Vedra FM & WM Replacement/0021-0006	**Date Collected:**	09/21/15 13:30
Sample Matrix:	Water	**Date Received:**	09/21/15 15:05
Sample Name:	SW-1	**Units:**	ug/L
Lab Code:	J1507498-003	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 624

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Q
Benzene	0.210 U	1.00	0.210	1	09/22/15 22:19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	108	68 - 118	09/22/15 22:19	
4-Bromofluorobenzene	102	78 - 129	09/22/15 22:19	
Dibromofluoromethane	104	80 - 114	09/22/15 22:19	
Toluene-d8	98	87 - 118	09/22/15 22:19	

Analytical Report

Client:	Meskel and Associates Engineering	**Service Request:**	J1507498
Project:	JEA Ponte Vedra FM & WM Replacement/0021-0006	**Date Collected:**	09/21/15 13:30
Sample Matrix:	Water	**Date Received:**	09/21/15 15:05
Sample Name:	SW-1	**Units:**	ug/L
Lab Code:	J1507498-003	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 625
Prep Method: Method

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Naphthalene	0.541 U	5.10	0.541	1	09/23/15 18:54	9/22/15	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	63	33 - 133	09/23/15 18:54	
2-Fluorobiphenyl	57	22 - 105	09/23/15 18:54	
2-Fluorophenol	40	10 - 69	09/23/15 18:54	
Nitrobenzene-d5	58	10 - 123	09/23/15 18:54	
Phenol-d6	33	10 - 59	09/23/15 18:54	
p-Terphenyl-d14	63	28 - 120	09/23/15 18:54	

Analytical Report

Client:	Meskel and Associates Engineering	**Service Request:**	J1507498
Project:	JEA Ponte Vedra FM & WM Replacement/0021-0006	**Date Collected:**	09/21/15 13:30
Sample Matrix:	Water	**Date Received:**	09/21/15 15:05
Sample Name:	SW-1	**Basis:**	NA
Lab Code:	J1507498-003		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Total	200.8	**8.2**	ug/L	1.0	0.5	1	09/28/15 14:58	09/22/15	
Cadmium, Total	200.8	0.10 U	ug/L	0.40	0.10	1	09/28/15 14:58	09/22/15	
Copper, Total	200.8	**3.9**	ug/L	1.0	0.3	1	09/28/15 14:58	09/22/15	
Lead, Total	200.8	**0.14 I**	ug/L	0.50	0.12	1	09/28/15 14:58	09/22/15	
Zinc, Total	200.8	**1.7 I**	ug/L	5.0	1.6	1	09/28/15 14:58	09/22/15	

Analytical Report

Client:	Meskel and Associates Engineering	**Service Request:**	J1507498
Project:	JEA Ponte Vedra FM & WM Replacement/0021-0006	**Date Collected:**	09/21/15 13:30
Sample Matrix:	Water	**Date Received:**	09/21/15 15:05
Sample Name:	SW-1	**Basis:**	NA
Lab Code:	J1507498-003		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	PQL	MDL	Dil.	Date Analyzed	Q
Carbon, Total Organic (TOC)	SM 5310 B	**13.5**	mg/L	1.0	0.09	1	09/28/15 16:07	
Chromium, Hexavalent	SM 3500-Cr B	**0.0011**	mg/L	0.0010	0.0005	1	09/21/15 16:45	
pH	SM 4500-H+ B	**8.69**	pH Units	-	-	1	09/22/15 14:22	

Analytical Report

Client:	Meskel and Associates Engineering	**Service Request:**	J1507498
Project:	JEA Ponte Vedra FM & WM Replacement/0021-0006	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	JQ1507148-06	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 624

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Q
Benzene	0.210 U	1.00	0.210	1	09/22/15 13:30	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	107	68 - 118	09/22/15 13:30	
4-Bromofluorobenzene	103	78 - 129	09/22/15 13:30	
Dibromofluoromethane	101	80 - 114	09/22/15 13:30	
Toluene-d8	98	87 - 118	09/22/15 13:30	

Analytical Report

Client:	Meskel and Associates Engineering	**Service Request:**	J1507498
Project:	JEA Ponte Vedra FM & WM Replacement/0021-0006	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	JQ1507122-01	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 625
Prep Method: Method

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Naphthalene	0.530 U	5.00	0.530	1	09/23/15 13:27	9/22/15	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	65	33 - 133	09/23/15 13:27	
2-Fluorobiphenyl	71	22 - 105	09/23/15 13:27	
2-Fluorophenol	56	10 - 69	09/23/15 13:27	
Nitrobenzene-d5	69	10 - 123	09/23/15 13:27	
Phenol-d6	45	10 - 59	09/23/15 13:27	
p-Terphenyl-d14	71	28 - 120	09/23/15 13:27	

Analytical Report

Client:	Meskel and Associates Engineering	**Service Request:**	J1507498
Project:	JEA Ponte Vedra FM & WM Replacement/0021-0006	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	J1507498-MB		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Total	200.8	0.5 U	ug/L	1.0	0.5	1	09/28/15 13:35	09/22/15	
Cadmium, Total	200.8	0.10 U	ug/L	0.40	0.10	1	09/28/15 13:35	09/22/15	
Copper, Total	200.8	**0.3 I**	ug/L	1.0	0.3	1	09/28/15 13:35	09/22/15	
Lead, Total	200.8	0.12 U	ug/L	0.50	0.12	1	09/28/15 13:35	09/22/15	
Zinc, Total	200.8	1.6 U	ug/L	5.0	1.6	1	09/28/15 13:35	09/22/15	

Analytical Report

Client:	Meskel and Associates Engineering	**Service Request:**	J1507498
Project:	JEA Ponte Vedra FM & WM Replacement/0021-0006	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	J1507498-MB		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	PQL	MDL	Dil.	Date Analyzed	Q
Carbon, Total Organic (TOC)	SM 5310 B	**0.2 I**	mg/L	1.0	0.09	1	09/28/15 15:08	
Chromium, Hexavalent	SM 3500-Cr B	0.0005 U	mg/L	0.0010	0.0005	1	09/21/15 16:45	

Client: Meskel and Associates Engineering **Service Request:** J1507498

Project: JEA Ponte Vedra FM & WM Replacement/0021-0006

Sample Matrix: Water

SURROGATE RECOVERY SUMMARY
Volatile Organic Compounds by GC/MS

Analysis Method: 624

		1,2-Dichloroethane-d4	4-Bromofluorobenzene	Dibromofluoromethane
Sample Name	**Lab Code**	**68 - 118**	**78 - 129**	**80 - 114**
B-1	J1507498-001	108	103	102
B-2	J1507498-002	109	103	104
SW-1	J1507498-003	108	102	104
Lab Control Sample	JQ1507148-04	105	106	103
Duplicate Lab Control Sample	JQ1507148-05	102	104	102
Method Blank	JQ1507148-06	107	103	101

Client: Meskel and Associates Engineering **Service Request:** J1507498

Project: JEA Ponte Vedra FM & WM Replacement/0021-0006

Sample Matrix: Water

SURROGATE RECOVERY SUMMARY
Volatile Organic Compounds by GC/MS

Analysis Method: 624

Sample Name	Lab Code	Toluene-d8 87 - 118
B-1	J1507498-001	97
B-2	J1507498-002	98
SW-1	J1507498-003	98
Lab Control Sample	JQ1507148-04	97
Duplicate Lab Control Sample	JQ1507148-05	97
Method Blank	JQ1507148-06	98

Client:	Meskel and Associates Engineering	**Service Request:**	J1507498
Project:	JEA Ponte Vedra FM & WM Replacement/0021-0006	**Date Analyzed:**	09/22/15
Sample Matrix:	Water		

Duplicate Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Analysis Method:	624	**Units:**	ug/L
		Basis:	NA
		Analysis Lot:	463369

	Lab Control Sample JQ1507148-04			Duplicate Lab Control Sample JQ1507148-05					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Benzene	52.8	50.0	106	53.1	50.0	106	83-118	<1	30

Client: Meskel and Associates Engineering **Service Request:** J1507498

Project: JEA Ponte Vedra FM & WM Replacement/0021-0006

Sample Matrix: Water

SURROGATE RECOVERY SUMMARY
Semivolatile Organic Compounds by GC/MS

Analysis Method: 625

Extraction Method: Method

Sample Name	Lab Code	2,4,6-Tribromophenol 33 - 133	2-Fluorobiphenyl 22 - 105	2-Fluorophenol 10 - 69
B-1	J1507498-001	67	59	41
B-2	J1507498-002	51	44	31
SW-1	J1507498-003	63	57	40
Method Blank	JQ1507122-01	65	71	56
Lab Control Sample	JQ1507122-02	71	67	53
Duplicate Lab Control Sample	JQ1507122-03	67	59	35

Client: Meskel and Associates Engineering **Service Request:** J1507498

Project: JEA Ponte Vedra FM & WM Replacement/0021-0006

Sample Matrix: Water

SURROGATE RECOVERY SUMMARY
Semivolatile Organic Compounds by GC/MS

Analysis Method: 625

Extraction Method: Method

Sample Name	Lab Code	Nitrobenzene-d5 10 - 123	Phenol-d6 10 - 59	p-Terphenyl-d14 28 - 120
B-1	J1507498-001	59	31	67
B-2	J1507498-002	42	26	53
SW-1	J1507498-003	58	33	63
Method Blank	JQ1507122-01	69	45	71
Lab Control Sample	JQ1507122-02	65	44	69
Duplicate Lab Control Sample	JQ1507122-03	56	31	51

Client: Meskel and Associates Engineering **Service Request:** J1507498

Project: JEA Ponte Vedra FM & WM Replacement/0021-0006

Sample Matrix: Water

SURROGATE RECOVERY SUMMARY
Semivolatile Organic Compounds by GC/MS

Analysis Method: 625

Extraction Method: Method

Sample Name	Lab Code	p-Terphenyl-d14 28 - 120
B-1	J1507498-001	67
B-2	J1507498-002	53
SW-1	J1507498-003	63
Method Blank	JQ1507122-01	71
Lab Control Sample	JQ1507122-02	69
Duplicate Lab Control Sample	JQ1507122-03	51

Client:	Meskel and Associates Engineering	**Service Request:**	J1507498
Project:	JEA Ponte Vedra FM & WM Replacement/0021-0006	**Date Analyzed:**	09/23/15
Sample Matrix:	Water	**Date Extracted:**	09/22/15

Duplicate Lab Control Sample Summary
Semivolatile Organic Compounds by GC/MS

Analysis Method:	625	**Units:**	ug/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	463728

	Lab Control Sample JQ1507122-02			Duplicate Lab Control Sample JQ1507122-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Naphthalene	25.5	40.0	64	22.7	40.0	57	21-133	12	30

Client: Meskel and Associates Engineering
Project: JEA Ponte Vedra FM & WM Replacement/0021-0006
Sample Matrix: Water

Service Request: J1507498
Date Analyzed: 09/28/15

Lab Control Sample Summary
Inorganic Parameters

Units:ug/L
Basis:NA

Lab Control Sample
J1507498-LCS

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Arsenic, Total	200.8	49.8	50.0	100	85-115
Cadmium, Total	200.8	21.5	20.0	107	85-115
Copper, Total	200.8	53.4	50.0	107	85-115
Lead, Total	200.8	25.8	25.0	103	85-115
Zinc, Total	200.8	258	250	103	85-115

Client:	Meskel and Associates Engineering	**Service Request:**	J1507498
Project	JEA Ponte Vedra FM & WM Replacement/0021-0006	**Date Collected:**	09/21/15
Sample Matrix:	Water	**Date Received:**	09/21/15
		Date Analyzed:	09/21/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	B-1	**Units:**	mg/L
Lab Code:	J1507498-001	**Basis:**	NA

Analyte Name	Analysis Method	PQL	MDL	Sample Result	Duplicate Sample J1507498-001DUP Result	Average	RPD	RPD Limit
Chromium, Hexavalent	SM 3500-Cr B	0.0010	0.0005	0.0010	0.0015	0.00125	40 *	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client:	Meskel and Associates Engineering	**Service Request:**	J1507498
Project	JEA Ponte Vedra FM & WM Replacement/0021-0006	**Date Collected:**	09/21/15
Sample Matrix:	Water	**Date Received:**	09/21/15
		Date Analyzed:	09/22/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	B-1	**Units:**	pH Units
Lab Code:	J1507498-001	**Basis:**	NA

Analyte Name	Analysis Method	PQL	MDL	Sample Result	Duplicate Sample J1507498-001DUP Result	Average	RPD	RPD Limit
pH	SM 4500-H+ B	-	-	6.59	6.55	6.57	<1	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Meskel and Associates Engineering	**Service Request:**	J1507498
Project:	JEA Ponte Vedra FM & WM Replacement/0021-0006	**Date Collected:**	09/21/15
Sample Matrix:	Water	**Date Received:**	09/21/15
		Date Analyzed:	09/21/15

Matrix Spike Summary
Chromium, Hexavalent

Sample Name:	B-1	**Units:**	mg/L
Lab Code:	J1507498-001	**Basis:**	NA
Analysis Method:	SM 3500-Cr B		

Matrix Spike
J1507498-001MS

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Chromium, Hexavalent	0.0010	0.0012	0.100	0 *	85-115

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: Meskel and Associates Engineering
Project: JEA Ponte Vedra FM & WM Replacement/0021-0006
Sample Matrix: Water

Service Request: J1507498
Date Analyzed: 09/21/15 - 09/28/15

Lab Control Sample Summary
General Chemistry Parameters

Units:mg/L
Basis:NA

Lab Control Sample
J1507498-LCS

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Carbon, Total Organic (TOC)	SM 5310 B	47.4	50.0	95	90-110
Chromium, Hexavalent	SM 3500-Cr B	0.0966	0.100	97	90-110

ALS Environmental

Cooler Receipt Form

Client: Meskel & Associates Service Request #: J1507498

Project: JEA Ponte Vedra

Cooler received on 9/21/15 and opened on 9/21/15 by SC

COURIER: ALS UPS FEDEX (Client) Other _____ Airbill # _____

1	Were custody seals on outside of cooler?		Yes	(No)				
	If yes, how many and where?		#:___ on lid		other			
2	Were seals intact and signature and date correct?		Yes	No	(N/A)			
3	Were custody papers properly filled out?		(Yes)	No	N/A			
4	Temperature of cooler(s) upon receipt (Should be 0°C and ≤ 6°C)	1.3°C						
5	Thermometer ID	IR1						
6	Temperature Blank Present?		(Yes)	No				
7	Were Ice or Ice Packs present		(Ice)	Ice Packs	No			
8	Did all bottles arrive in good condition (unbroken, etc....)?		(Yes)	No	N/A			
9	Type of packing material present		(Netting)	Vial Holder	(Bubble Wrap)			
			Paper	Styrofoam	Other	N/A		
10	Were all bottle labels complete (sample ID, preservation, etc....)?		(Yes)	No	N/A			
11	Did all bottle labels and tags agree with custody papers?		(Yes)	No	N/A			
12	Were the correct bottles used for the tests indicated?		(Yes)	No	N/A			
13	Were all of the preserved bottles received with the appropriate preservative?		(Yes)	No	N/A			
	HNO3 pH<2 H2SO4 pH<2 ZnAc2/NaOH pH>9 NaOH pH>12 (HCl pH<2)							
	Preservative additions noted below							
14	Were all samples received within analysis holding times?		(Yes)	No	N/A			
15	Were all VOA vials free of air bubbles? If present, note below		(Yes)	No	N/A			
16	Where did the bottles originate?		(ALS)	Client				

Sample ID	Reagent	Lot #	ml added	Initials Date/Time

Additional comments and/or explanation of all discrepancies noted above:

Client approval to run samples if discrepancies noted: _____ Date: _____

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

ALS Environmental

9143 Philips Highway, Ste 200 • Jacksonville, FL 32256 (904) 739-2277 • 800-695-7222 x06 • FAX (904) 739-2011

PAGE _____ OF _____

SR# J1507498

CAS Contract

Project Name: JEA Ponte Vedra FM & WM Replacement	Project Number: 0021-0006
Project Manager: MARK BELYEV, P.G.	Email Address: mbelyeu@meskelengineering.com
Company/Address: Meskel & Associates Engineering 8936 Western Way, Suite 12 Jacksonville, FL 32256	
Phone #: (904) 519-6990	FAX #: (904) 519-6992
Sampler's Signature:	Sampler's Printed Name: MARLON VERCELES

ANALYSIS REQUESTED (Include Method Numbe

PRESERVATIVE: 1 1 2 0 0 0

J1507498
Meskel and Associates Engineering
JEA Ponte Vedra FM & WM Replacement

5

CLIENT SAMPLE ID	LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	624	TDC	Metals + As	PH, Hex Cromium	Low Level Hg	625	REMARKS/ ALTERNATE DESCRIPTION
B-1		9/21/15	11:25	GW	10	✓	✓	✓	✓	✓	✓	
B-2		9/21/15	12:46	GW	10	✓	✓	✓	✓	✓	✓	
SW-1		9/21/15	13:30	SW	10	✓	✓	✓	✓	✓	✓	

0. NONE
1. HCL
2. HNO_3
3. H_2SO_4
4. NaOH
5. Zn. Acetate
6. MeOH
7. $NaHSO_4$
8. Other _____

SPECIAL INSTRUCTIONS/COMMENTS

See QAPP ☐

TURNAROUND REQUIREMENTS
_____ RUSH (SURCHARGES APPLY)
✓ STANDARD
REQUESTED FAX DATE
REQUESTED REPORT DATE

REPORT REQUIREMENTS
_____ I. Results Only
_____ II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
_____ III. Results + QC and Calibration Summaries
_____ IV. Data Validation Report with Raw Data
_____ V. Specialized Forms / Custom Report
Edata _____ Yes _____ No

INVOICE INFORMATION
PO #
BILL TO:

SAMPLE RECEIPT: CONDITION/COOLER TEMP: 1.3 °C CUSTODY SEALS: Y N

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature	Signature	Signature	Signature	Signature	Signature
Printed Name: MARLON VERCELES	Printed Name	Printed Name	Printed Name	Printed Name	Printed Name
Firm: Meskel & Associates Eng	Firm: ALS	Firm	Firm	Firm	Firm
Date/Time: 9/21/15 15:05	Date/Time: 9.21.15 1505	Date/Time	Date/Time	Date/Time	Date/Time

Appendix A:
Subcontracted Parameters

30-Sep-2015

Jerry Allen
ALS Environmental
9143 Philips Hwy
Suite 200
Jacksonville, FL 32256

Re: **J1507498** Work Order: **15091320**

Dear Jerry,

ALS Environmental received 3 samples on 23-Sep-2015 09:30 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with NELAP standard requirements and QC results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 8.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

Electronically approved by: Bill Carey

Bill Carey
Project Manager

Certificate No: MN 532786

ALS Group USA, Corp

Date: 30-Sep-15

Client: ALS Environmental
Project: J1507498
Work Order: **15091320**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
15091320-01	J1507498-001	Water		9/21/2015 11:25	9/23/2015 09:30	☐
15091320-02	J1507498-002	Water		9/21/2015 12:46	9/23/2015 09:30	☐
15091320-03	J1507498-003	Water		9/21/2015 13:30	9/23/2015 09:30	☐

Client: ALS Environmental
Project: J1507498
WorkOrder: **15091320**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and PQL, sample results may exhibit background or reagent contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
µg/L	Micrograms per Liter

ALS Group USA, Corp

Date: *30-Sep-15*

CLIENT: ALS Environmental
Project: J1507498

Work Order: 15091320

Lab ID: 15091320-01A
Client Sample ID: J1507498-001
Collection Date: 9/21/2015 11:25:00 AM
Matrix: WATER

Analyses	Result	Report Limit	MDL	Qual	Units	Dilution Factor	Date Analyzed
MERCURY IN WATER			**E1631E**				Analyst: **JEC**
Mercury	**0.10**	**0.0025**	**0.0010**		**µg/L**	1	9/29/2015 02:11 PM

Lab ID: 15091320-02A
Client Sample ID: J1507498-002
Collection Date: 9/21/2015 12:46:00 PM
Matrix: WATER

Analyses	Result	Report Limit	MDL	Qual	Units	Dilution Factor	Date Analyzed
MERCURY IN WATER			**E1631E**				Analyst: **JEC**
Mercury	**0.010**	**0.0010**	**0.00040**		**µg/L**	1	9/29/2015 02:19 PM

Lab ID: 15091320-03A
Client Sample ID: J1507498-003
Collection Date: 9/21/2015 1:30:00 PM
Matrix: WATER

Analyses	Result	Report Limit	MDL	Qual	Units	Dilution Factor	Date Analyzed
MERCURY IN WATER			**E1631E**				Analyst: **JEC**
Mercury	**0.0018**	**0.0010**	**0.00040**		**µg/L**	1	9/29/2015 02:27 PM

Qualifiers:

U - Analyzed for but Not Detected
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
P - Dual Column results RPD > 40%
E - Value above quantitation range
H - Analyzed outside of Hold Time

Batch ID: **76622** Instrument ID **HG2** Method: **E1631E**

MBLK1	Sample ID: **MBLK1-76622-76622**				Units: **ng/L**			Analysis Date: **9/29/2015 11:40 AM**			
Client ID:	Run ID: **HG2_150929A**				SeqNo: **3481718**			Prep Date: **9/29/2015**		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	U	0.50	0	0	0		0			

MBLK2	Sample ID: **MBLK2-76622-76622**				Units: **ng/L**			Analysis Date: **9/29/2015 12:26 PM**			
Client ID:	Run ID: **HG2_150929A**				SeqNo: **3481724**			Prep Date: **9/29/2015**		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	U	0.50	0	0	0		0			

MBLK3	Sample ID: **MBLK3-76622-76622**				Units: **ng/L**			Analysis Date: **9/29/2015 01:49 PM**			
Client ID:	Run ID: **HG2_150929A**				SeqNo: **3481739**			Prep Date: **9/29/2015**		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	U	0.50	0	0	0		0			

MS	Sample ID: **15091318-19AMS**				Units: **ng/L**			Analysis Date: **9/29/2015 11:55 AM**			
Client ID:	Run ID: **HG2_150929A**				SeqNo: **3481720**			Prep Date: **9/29/2015**		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	5.67	0.50	5	0.95	94.4	71-125	0			

MS	Sample ID: **15091318-21AMS**				Units: **ng/L**			Analysis Date: **9/29/2015 12:33 PM**			
Client ID:	Run ID: **HG2_150929A**				SeqNo: **3481725**			Prep Date: **9/29/2015**		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	6.29	0.50	5	1.01	106	71-125	0			

MSD	Sample ID: **15091318-19AMSD**				Units: **ng/L**			Analysis Date: **9/29/2015 12:02 PM**			
Client ID:	Run ID: **HG2_150929A**				SeqNo: **3481721**			Prep Date: **9/29/2015**		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	5.67	0.50	5	0.95	94.4	71-125	5.67	0	24	

MSD	Sample ID: **15091318-21AMSD**				Units: **ng/L**			Analysis Date: **9/29/2015 12:41 PM**			
Client ID:	Run ID: **HG2_150929A**				SeqNo: **3481726**			Prep Date: **9/29/2015**		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	6.17	0.50	5	1.01	103	71-125	6.29	1.93	24	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: ALS Environmental
Work Order: 15091320
Project: J1507498

QC BATCH REPORT

Batch ID: **76622** Instrument ID **HG2** Method: **E1631E**

LCS-OPR-START	Sample ID: **OPR-START-76622-76622**				Units: **ng/L**			Analysis Date: **9/29/2015 11:25 AM**		
Client ID:	Run ID: **HG2_150929A**				SeqNo: **3481716**		Prep Date: **9/29/2015**		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	5.46	0.50	5	0	109	77-123	0			

LCS-OPR-END	Sample ID: **OPR-END-76622-76622**				Units: **ng/L**			Analysis Date: **9/29/2015 02:49 PM**		
Client ID:	Run ID: **HG2_150929A**				SeqNo: **3481747**		Prep Date: **9/29/2015**		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	4.96	0.50	5	0	99.2	77-123	0			

The following samples were analyzed in this batch:

15091320-01A	15091320-02A	15091320-03A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Environmental Chain of Custody

9143 Philips Highway, Suite 200 • Jacksonville, FL 32256 • 904-739-2277 • FAX 904-739-2011

ALS Contact: Jerry Allen

1509320

Project Number: J1507498
Project Manager: Jerry Allen

	Lab Code	Sample ID	# of Cont.	Matrix	Sample Date	Sample Time	Lab ID	Hg LL T 1631E
1	J1507498-001	B-1	1	Water	9/21/15	1125	Holland ALS	X
2	J1507498-002	B-2	1	Water	9/21/15	1246	Holland ALS	X
3	J1507498-003	SW-1	1	Water	9/21/15	1330	Holland ALS	X

Special Instructions/Comments

H - Test is On Hold P - Test is Authorized for Prep Only

Turnaround Requirements

____ **RUSH** (Surcharges Apply)

PLEASE CIRCLE WORK DAYS

1 2 3 4 5

✓ **STANDARD**

Requested FAX Date: 9/30/15

Requested Report Date: ~~09/28/15~~

Report Requirements

____ I. Results Only

✓ II. Results + QC Summaries

____ III. Results + QC and Calibration Summaries

____ IV. Data Validation Report with Raw Data

PQL/MDL/J Y

EDD N

Invoice Information

PO# 53J1507498

Bill to

Relinquished By: 9/22/15

FEDEX

Received By: 9/23/15 0930

Airbill Number: 3.09

ALS Group USA, Corp

Sample Receipt Checklist

Client Name: **ALS - JACKSONVILLE** Date/Time Received: **23-Sep-15 09:30**

Work Order: **15091320** Received by: **KRW**

Checklist completed by Keith Wierenga (eSignature) 23-Sep-15 (Date) Reviewed by: Bill Carey (eSignature) 23-Sep-15 (Date)

Matrices: Water

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	3.0/3.0 C	SR2	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	9/23/2015 3:05:15 PM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☑	N/A ☐
pH adjusted by:	-		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

SRC Page 1 of 1

Appendix C

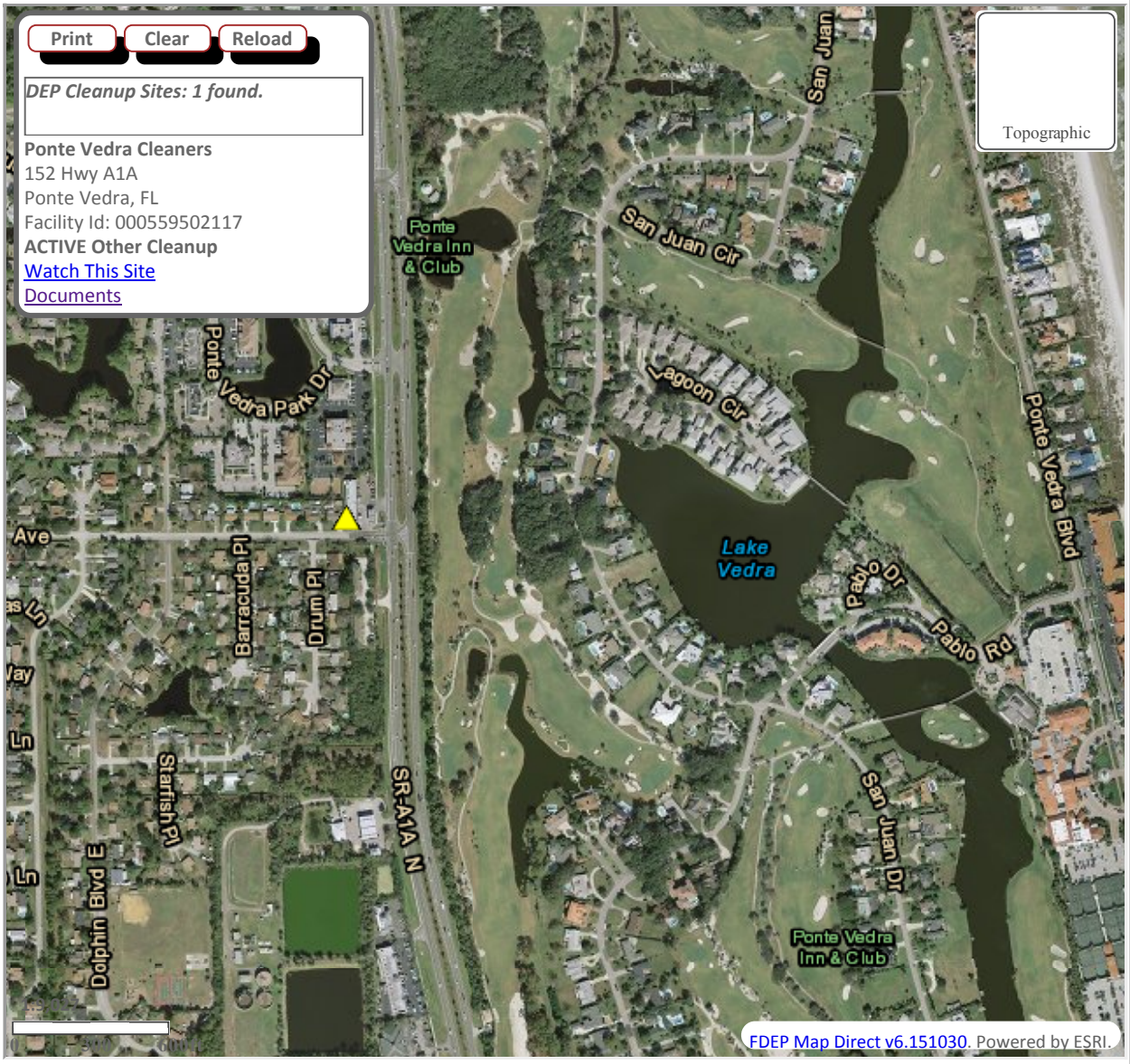
Resources for:
- Citizens
- Educators
- Businesses
- Government

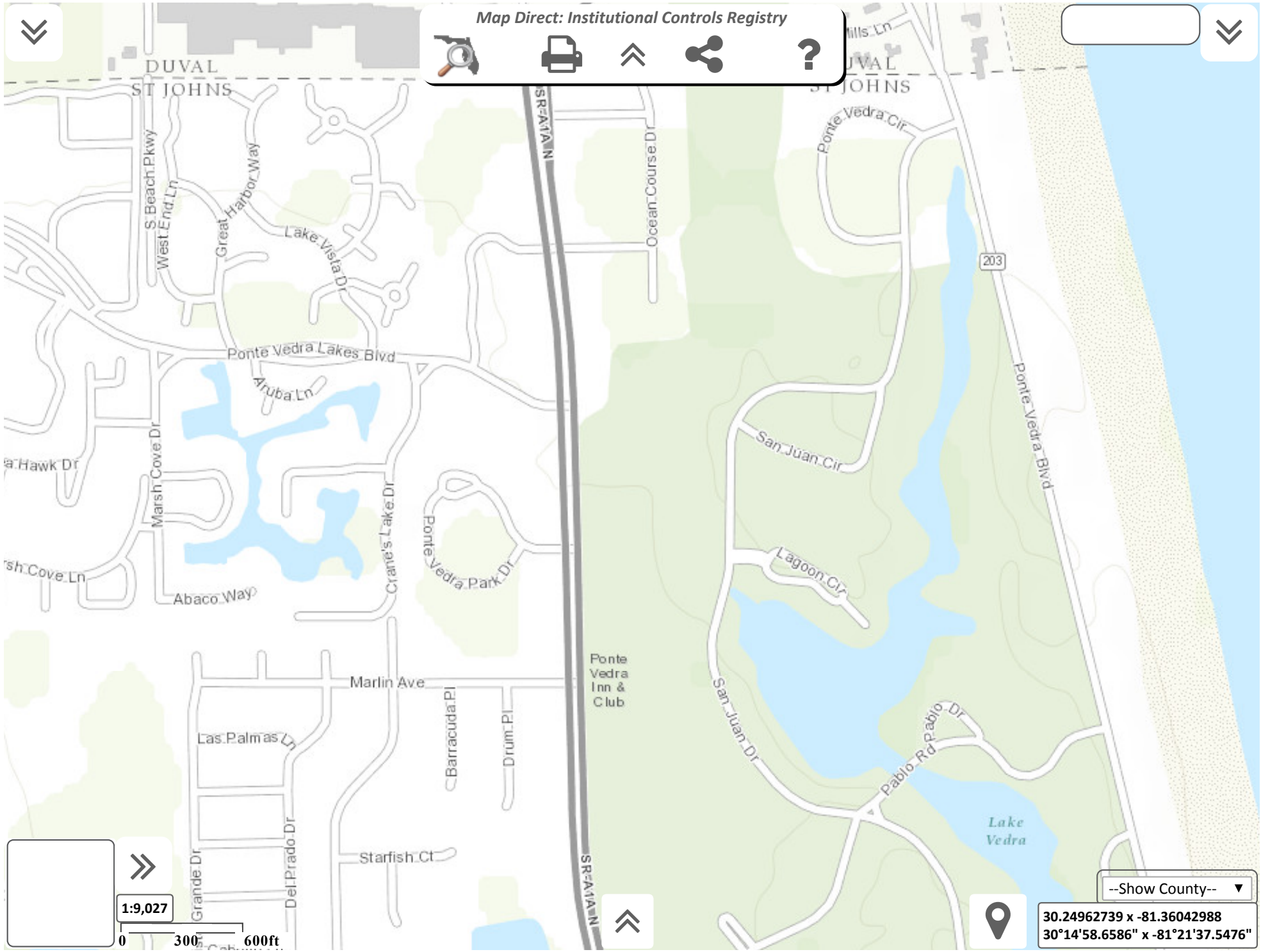
Information
- Calendar
- Contacts
- News
- Newsletters
- Organizational Chart
- Publications & Reports
- OCULUS

Contamination Locator Map

Search Criteria: Sites in JACKSONVILLE. Cleanup types: Brownfields Petroleum Superfund Other Waste Cleanup

For further information, please call the Waste Cleanup Hotline at (866)282-0787. **If you wish to search again, please click here**




Map Direct: Institutional Controls Registry
DUVAL
ST JOHNS
S Beach Pkwy
West End Ln
Great Harbor Way
Lake Vista Dr
Ocean Course Dr
SR A1A N
Ponte Vedra Cir
203
Ponte Vedra Lakes Blvd
Aruba Ln
Marsh Cove Dr
Hawk Dr
Crane's Lake Dr
Ponte Vedra Park Dr
Abaco Way
Ponte Vedra Blvd
San Juan Cir
Lagoon Cir
Ponte Vedra Inn & Club
Marlin Ave
Barracuda Pl
Drum Pl
Las Palmas Ln
San Juan Dr
Pablo Rd
Pablo Dr
Lake Vedra
Del Prado Dr
Grande Dr
Starfish Ct
1:9,027
0 300 600ft
--Show County--
30.24962739 x -81.36042988
30°14'58.6586" x -81°21'37.5476"